

WHAT IS CLAIMED IS:

1. An apparatus for calibrating an output of an image output device, comprising:
an image input device configured to image an output of said image output device; and
a test pattern generator having an output of a dynamic test patch area and a grating area connected to an input of said image output device and responsive to said image input device for adjusting an intensity level of said dynamic test patch area to match an average intensity level of said grating area.
2. The apparatus of claim 1 wherein said test pattern generator additionally has an output of a fixed level area.
3. The apparatus of claim 1 wherein said test pattern generator is further configured to set said intensity level of said grating area and adjust said intensity level of said dynamic test patch area by setting pixel values of said grating area and said dynamic test patch areas.
4. The apparatus of claim 1 wherein said dynamic test patch area comprises a plurality of pixels of substantially equal intensity levels and said grating area comprises at least two groups of pixels, each group having a different, predetermined intensity level.
5. The apparatus of claim 4 wherein each of said two groups of pixels of said grating area are set to respective predetermined pixel values associated with said predetermined intensity levels.
6. The apparatus of claim 1 wherein said dynamic test patch area comprises an area of uniform pixel value and said grating area comprises a plurality of lines of pixels, a number of said lines of pixels having a first value and a second number of said lines of pixels having a second value different from said first value.
7. The apparatus of claim 6 wherein said test pattern generator is configured to control said uniform pixel value of said dynamic test patch area to adjust said intensity level of said dynamic test patch to be equal to said average intensity level of said grating area.

8. The apparatus of claim 1 wherein said test pattern generator is further configured to associate a plurality of pixel values with corresponding pixel intensities, said grating area comprising pixels having a combination of at least two of said plurality of pixel values.

9. The apparatus of claim 8 wherein said combination of at least two of said plurality of pixel values results in a new average intensity level of said grating whereby said test pattern generator is configured to adjust pixel values of said dynamic test patch to approximate said new average intensity level.

10. The apparatus of claim 1 wherein said test pattern generator is further configured to adjust said level of said dynamic test patch area to match a plurality of predetermined average intensity levels of said grating.

11. The apparatus of claim 10 further comprising a gamma corrector responsive to said test pattern generator to map a plurality of pixel values to corresponding pixel intensity levels.

12. The apparatus of claim 1 wherein said image output device include a video monitor and said image input device comprises a video camera.

13. The apparatus of claim 1 wherein said test pattern generator is further configured to adjust an intensity level of said fixed level area to maintain a predetermined average intensity level of the output device.

14. The apparatus of claim 1 wherein said test pattern generator additionally has an output of a fixed level area and said dynamic test patch, grating and fixed level areas comprise areas displayed on a video display, said dynamic test patch and grating areas comprising areas of said video display substantially smaller than and located at a periphery of said fixed level area.

15. The apparatus of claim 1 wherein said image output device include a printer and said image input device comprises an optical scanning device.

16. The apparatus of claim 1 wherein said test pattern generator additionally has an output of fixed level area and said dynamic test patch, grating and fixed level areas comprise areas printed on a medium, said dynamic test patch and grating areas comprising printed areas of said medium substantially smaller than and located at a periphery of said fixed level area.

17. A method of calibrating an output of an image output device, comprising the steps of:

generating a test pattern including a grating area and a dynamic test patch area;
setting a configuration of pixels within said grating area to first and second predetermined pixel levels;
adjusting a value of pixels within said dynamic test patch area to match an intensity level of said dynamic test patch area to an average intensity level of said grating area.

18. The method of claim 17 wherein said step of generating a test pattern further includes generating a fixed level area, said grating area and dynamic test patch area comprising smaller areas than, and embedded in, said fixed level area.

19. The method of claim 17 further comprising repeating said steps of setting and adjusting to provide a gamma correction value.

20. The method of claim 17 wherein said step of adjusting includes a step of measuring an average pixel illumination level of said grating area and a pixel illumination level of said dynamic test patch area.

21. The method of claim 17 wherein said step of generating includes supplying a video signal to a video display.

22. An apparatus for calibrating an output of an image output device, comprising:
detector means for image the output of the image output device; and
test pattern generator means for providing a test pattern to said image output device, the test pattern including dynamic test patch, grating and fixed level areas, said test pattern generator means responsive to said detector means for adjusting an intensity level of said dynamic test patch area to match an average intensity level of said grating area.